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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,377	09/26/2005	Hideo Toyoda	000023-064	6517

21839 7590 08/27/2008
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

KARPINSKI, LUKE E

ART UNIT	PAPER NUMBER
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1616

NOTIFICATION DATE	DELIVERY MODE
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08/27/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/531,377	Applicant(s) TOYODA ET AL.	
	Examiner LUKE E. KARPINSKI	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 4-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-3 and 36-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/04/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of IDS, Amendment, and Arguments/Remarks filed 6/4/2008 is acknowledged.

Claims

Claims 1-38 are currently pending.

Claims 4-35 are withdrawn as being drawn to non-elected subject matter.

Claims 1-3 and 36-38 are under consideration in this action.

Maintained Rejections

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3

2. **Claims 1-3 are rejected under 35 U.S.C. 102(e)** as being anticipated by US Patent No. 6,635,715 to Datta et al. as evidenced by Patent No. 6,153,354 to Katsumata et al.

3. Datta et al. disclose an olefin wax which is a copolymer comprising ethylene, an olefin, and a diene (col. 4, lines 56-61 and col. 5, lines 26-29). It is noted by the Examiner that propylene is an olefin as disclosed in the Applicants specification (page 13, lines 4-5). Datta et al. also disclose the content of unsaturated groups per molecule to be between 0.5 and 3. The fact that the polymer is made of ethylene and propylene, which have no unsaturated groups, and vinyl norbornene (col. 5, lines 33-38), which has one unsaturated group and is found only at either end of the molecule, means that each molecule will have only 1-2 unsaturated groups. Datta et al. also disclose the melting point in the range of 70 to 130°C (col. 8, lines 1-10). Datta et al. also disclose the ratio (Mw/Mn) of the weight average molecular weight to the number average molecular weight is not more than 4 (col. 9, lines 38-42). It is well known in the art that the molecular weight distribution is equal to (Mw/Mn) (Katsumata et al. col. 3, lines 20-22). Using the equation $Mw/Mn = \text{ratio}$; and the Mw value of 5000 (col. 9, line 41) and the ratio of 4 (col. 9, line 42), it can be calculated that the composition taught by Datta et al. has a Mn value of 1250. Datta et al. also disclose the olefin wax prepared by the use of

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a metallocene catalyst (col. 5, lines 8-11). Although Datta et al. do not explicitly teach that the density of the composition is in the range of 870 to 980 kg/m³, it is the examiners position that the density is inherent. The compositions of Datta et al. have the same components at the same percentages and the same molecular weights; thus it would be expected that the compositions of Datta et al. would have a density within the same range (MPEP Section 2112.01). The Examiner has made a reasonable rational for inherency. The office does not have the facilities to test the density of the compositions of Datta et al.; therefore, the burden has shifted to the Applicant to show that the compositions of Datta et al. do not have a density within the claimed.

New Rejections

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.

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3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 3, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Publication No. WO88/04674 to Welborn et al.

Applicant Claims

Applicant claims a polyethylene wax, which is a copolymer obtained by copolymerizing ethylene and a diene or obtained by copolymerizing ethylene, a diene, and an olefin. Applicant also claims a specific diene, percentages of components, and properties of said compositions.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

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Welborn et al. teach a copolymer, comprising ethylene and a diene (abstract), residual unsaturation (col. 1, lines 29-30, col. 6, line 10, and col. 7, lines 16-25), a density below 0.930 g/cc (col. 6, lines 23-31), a number average molecular weight of about 500 and about 1000 (col. 9, lines 1-3), and a MW/MN ratio of below 4 (col. 5, lines 12-17), as pertaining to claims 1 and 36.

Welborn et al. further teach preparation of said polymers through the utilization of a metallocene catalyst (col. 6, lines 3-9) as claimed in claims 3 and 38. Welborn et al. also teach copolymers (dienes and olefins) present at 3% by mole (col. 6, lines 23 to col. 7, line 3), as well as, reasons for altering said mol percentage (col. 2, line 35 to col. 3, line 10), as pertaining to claim 36.

***Ascertainment of the Difference between Scope the Prior Art and the Claims
(MPEP §2141.012)***

Although Welborn et al. do not anticipate the compositions of the instant invention, Welborn et al. do teach all of said components present within, or close to the claimed ranges.

***Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)***

Regarding claims 1 and 36, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the polymers of Welborn et al. comprising an ethylene, a diene and having 0.5 to 3 groups of unsaturation,

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wherein said composition had a density between 870 and 980 kg/m³, a melting point of 70-130 degrees C, a number average molecular weight of 400-5000, and a MW/MN ratio of 4 or less in order to produce the invention of instant claim 1.

One of ordinary skill in the art would have been motivated to do this because Welborn et al. teach polymers comprising ethylene and dienes with residual unsaturation and density, number average molecular weight, and MW/MN ratio within the claimed ranges. Therefore, it would have been obvious to utilize the polymers and teachings of Welborn et al. in order to produce the claimed polymers. Regarding the limitation of 0.5 to 3 unsaturated groups per molecule, Welborn et al. teach said polymers having residual unsaturation, that the amount of unsaturation can be altered through which monomers are utilized, and that such unsaturation is for subsequent modification of said polymer. One of ordinary skill in the art would have been readily aware of the ability to alter the degree of saturation, along with the reasons to alter said saturation.

Regarding the melting point, the compositions of Welborn et al. teach the same components at the same percentages and the same molecular weights as the claimed invention; thus the compositions of Welborn et al. would necessarily have a melting point within the claimed range (MPEP Section 2112.01). The office does not have the facilities to test the melting point of the compositions of Welborn et al.; therefore, the burden has shifted to the Applicant to show that the compositions of Welborn et al. do not have a density within the claimed.

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Regarding claims 3 and 38, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the polymers of Welborn et al. by the use of a metallocene catalyst, in order to produce the invention of instant claims 3 and 38.

One of ordinary skill in the art would have been motivated to do this because Welborn et al. teach that the disclosed polymers can be made in such a manner. Therefore, it would have been obvious to utilize a metallocene catalyst in the production of the polymers of Welborn et al.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

2. Claims 2 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over International Publication No. WO88/04674 to Welborn et al. in view of US Patent No. 6,635,715 to Datta et al.

Applicant Claims

Applicant claims a polyethylene wax, which is a copolymer obtained by copolymerizing ethylene and a diene or obtained by copolymerizing ethylene, a diene,

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and an olefin. Applicant also claims vinyl norbornene as the diene utilized, percentages of components, and properties of said compositions.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The disclosure of Datta et al. and the teachings of Welborn et al. are delineated above.

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

Welborn et al. do not teach vinyl norbornene as claimed in claims 2 and 37. This deficiency in Welborn et al. is cured by Datta et al. Datta et al. teach vinyl norbornene as a specific diene utilized in similar polymers (col. 5, lines 26-37).

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

Regarding claims 2 and 37, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the polymers of Welborn et al. with vinyl norbornene, as taught by Datta et al. in order to produce the invention of instant claims 2 and 37.

One of ordinary skill in the art would have been motivated to do this because Welborn et al. teach polymers with dienes and Datta et al. teach vinyl norbornene as a specific diene utilized in similar polymers. Therefore, it would have been obvious to

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utilize the vinyl norbornene diene, of Datta et al., in the polymers of Welborn et al. in order to utilize a diene known for polymerization of similar polymers.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant's arguments filed 6/4/08 have been fully considered but they are not persuasive.

Applicant argues that the instant invention is to polyethylene waxes and Datta et al. relates to polypropylenes.

This argument is not persuasive. Although the general disclosure of Datta et al. relates to polypropylene polymers, these polymers are made of two separate components, the second component being the polymer of the instant invention. Datta et al. teach the formulation of said second component, as well as the second component separate from the first and therefore, the instant invention is anticipated.

Conclusion

Claims 4-35 are withdrawn as being drawn to non-elected subject matter.

Claims 1-3 and 36-38 are rejected.

No claims are allowed.

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 6/4/2008 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiries

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE E. KARPINSKI whose telephone number is (571)270-3501. The examiner can normally be reached on Monday Thursday 9-4 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEK

/Johann R. Richter/

Supervisory Patent Examiner, Art Unit 1616